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TRANSMITTAL OF APPEAL BRIEF

Docket No.
M4065.0467/P467

In re Application of: Amy R. Griffin

Application No.
09/893,619-Conf. #4918

Filing Date
June 29, 2001

Examiner
C. A. Fox

Group Art Unit
3652

Invention: LIFT AND ALIGN TABLE

TO THE COMMISSIONER OF PATENTS:

Transmitted herewith is the Supplemental Appeal Brief in this application, with respect to the Notice of Appeal

filed: August 6, 2004 . The original Appeal Brief and fee were filed on October 6, 2004.

The fee for filing this Appeal Brief is _____ .

☒ Large Entity ☐ Small Entity

☐ A petition for extension of time is also enclosed.

The fee for the extension of time is _____ .

☐ A check in the amount of _____ is enclosed.

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This sheet is submitted in duplicate.

Dated: March 29, 2005

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Docket No.: M4065.0467/P467
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Amy R. Griffin

Application No.: 09/893,619

Confirmation No.: 4918

Filed: June 29, 2001

Art Unit: 3652

For: LIFT AND ALIGN TABLE

Examiner: C. A. Fox

SUPPLEMENTAL APPEAL BRIEF

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This Supplemental Appeal Brief is being submitted in response to the reopening of prosecution of the subject application by an Office Action mailed on December 29, 2004. The purpose of the December 29th Office Action was to set forth new reasoning in some of the rejections discussed below. The Notice of Appeal was filed on August 6, 2004, and the original Appeal Brief was filed October 6, 2004. In accordance with 37 CFR § 1.193(b)(2)(ii), Appellant hereby requests reinstatement of the appeal.

This is an appeal pursuant to 35 U.S.C. § 134 and 37 C.F.R. §§ 41.31 et seq. from the rejection of claims 1-4, 7-13, 17-28, 31-35 and 39-46 in the above-identified application mailed on December 29, 2004. The fee for filing this Supplemental Brief was submitted with the original Appeal Brief on October 6, 2004. Any deficiency in the fees associated with this Brief should be charged to our Deposit Account No. 04-1073.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37 and M.P.E.P. § 1206:

I.	Real Party In Interest
II	Related Appeals and Interferences
III.	Status of Claims
IV.	Status of Amendments
V.	Summary of Claimed Subject Matter
VI.	Grounds of Rejection to be Reviewed on Appeal
VII.	Arguments
VIII.	Conclusion
Appendix A	Claims

I. REAL PARTY IN INTEREST

The real party in interest for this appeal is Micron Technology, Inc., the assignee of this application.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

A. Total Number of Claims in Application

There are 37 claims pending in application.

B. Current Status of Claims

1. Claims canceled: 5, 6, 14-16, 29, 30 and 36-38.
2. Claims withdrawn from consideration but not canceled: none.
3. Claims pending: 1-4, 7-13, 17-28, 31-35 and 39-46.
4. Claims allowed: none.
5. Claims rejected: 1-4, 7-13, 17-28, 31-35 and 39-46.

C. Claims On Appeal

The claims on appeal are claims 1-4, 7-13, 17-28, 31-35 and 39-46.

IV. STATUS OF AMENDMENTS

Appellant filed an Amendment After Final Rejection on June 7, 2004. The Examiner responded to the Amendment After Final Rejection in an Advisory Action mailed July 16, 2004. In the Advisory Action, the Examiner indicated that Appellant's proposed amendments to claim 35 has been entered, and, as a result, the rejection of claim 35 under 35 U.S.C. § 112 has been overcome. No amendments have been made in response to the Office Action of December 29, 2004, which reopened prosecution.

V. SUMMARY OF CLAIMED SUBJECT MATTER

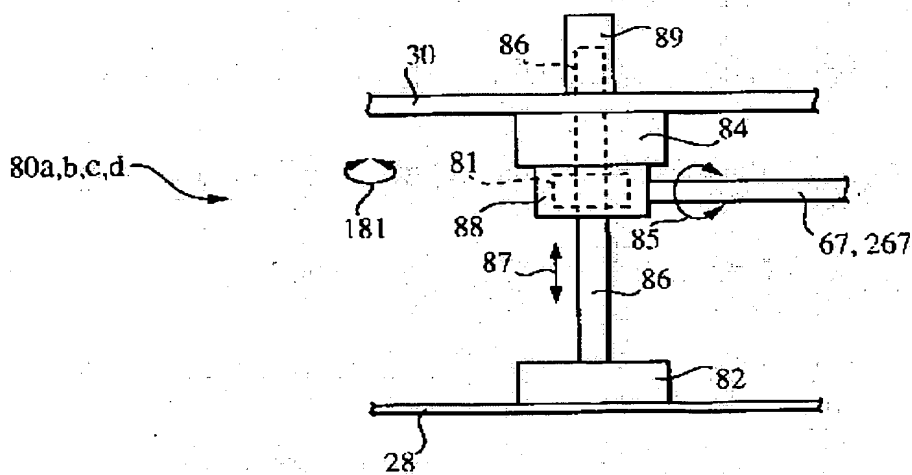
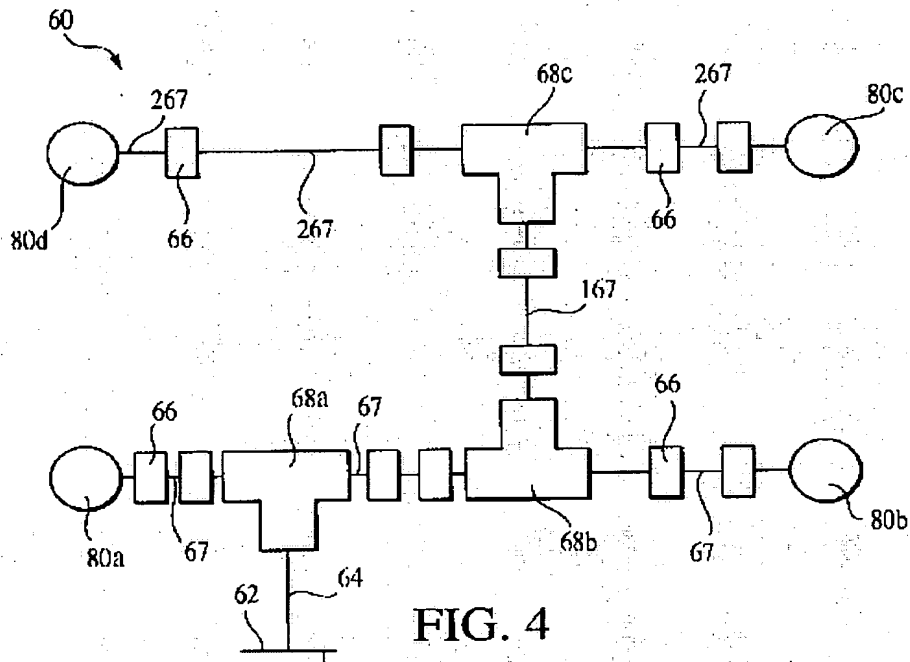
The present invention relates to an apparatus and a method for transferring heavy or awkward objects to a desired destination, and more particularly, to a lift and align table capable of moving an object in multiple directions. An exemplary use for the lift and align table of the present invention is to align a test head to a handler unit as used in the semiconductor chip industry.

FIG. 1

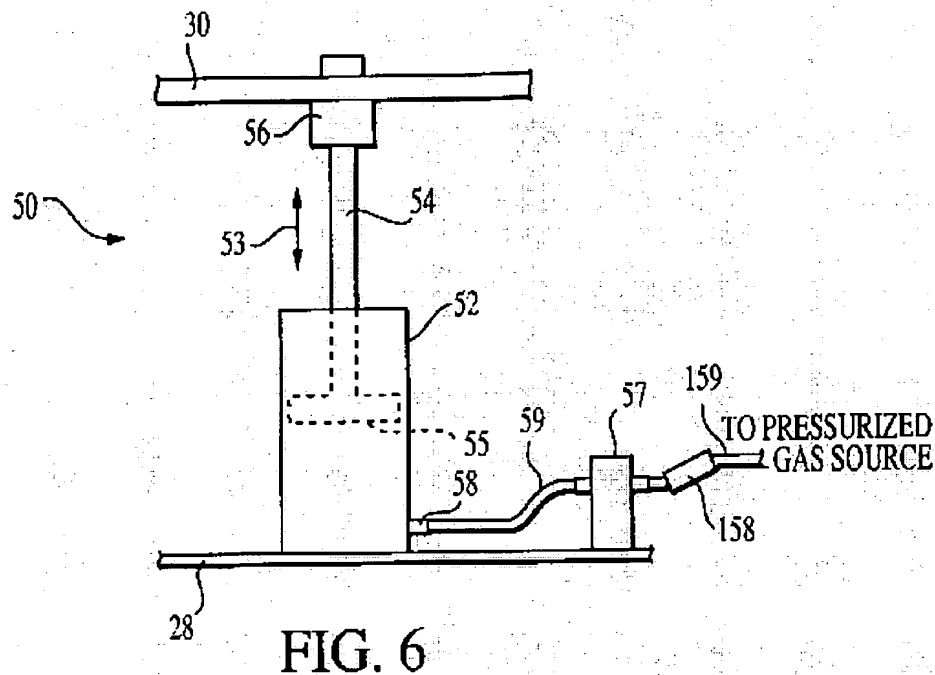
FIG. 1

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the jacking mechanisms 80a-d. The rotational force causes shafts 67, 267 to rotate in the direction of arrows 85, as shown in Figure 5. The transmission modules 88 move vertically along the jacking screws 86 of each one of four jacking mechanisms 80a-d in response to rotation of shafts 67, 267, which cause the middle plate 30 to move vertically relative to the base frame 20.



Referring now to Figure 6, gas cylinder assemblies 50, which assist in movement of middle plate 30, will be described. Each gas cylinder assembly 50 comprises a gas cylinder 52, a piston 54, a piston block 56, and a gas supply line 59 that connects to the cylinder 52 through a fitting 58. In use, pressurized gas is administered from an external source (not shown) through a supply line 159 to a 3-way valve 57.



In an exemplary embodiment of the present invention, two gas cylinder assemblies are provided at midspans of the side braces 28, as illustrated in Figure 1. In this embodiment, the function of the gas cylinders 50 is to assist with the vertical movement of middle plate 30 relative to the base frame 20. The force exerted by the pistons 54 on the middle plate 30 will be complementary to the force applied to the middle plate 30 by the jacking mechanisms 80.

With reference to Figure 7 reproduced below, a slide mechanism 70 is provided between the middle plate 30 and the upper plate 40 (not shown in Figure 7) to allow horizontal movement of upper plate 40 relative to middle plate 30. The slide mechanism includes a support frame that has two side supports 178 and two rail supports 180 arranged as shown. Two slider block rails 182 are attached to top of the two rail supports 180. Four slider blocks 190 are slidably engaged with the slider block rails, two on each rail, 182 as shown. The slide mechanism 70 further has a handwheel 172 attached to a shaft 174.

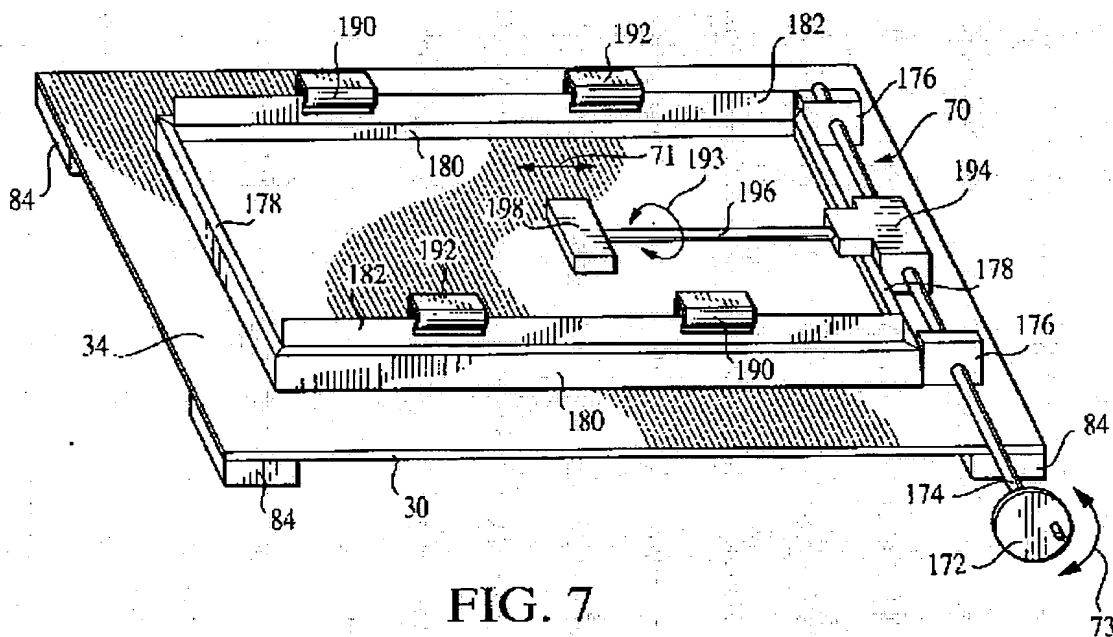


FIG. 7

In use, rotational force is applied to the handwheel 172, and thereby shaft 174, to rotate the shaft 174 in a direction indicated by arrows 73. Rotational force is transmitted from shaft 174, through gearbox 194, to lead screw 196 causing the lead screw 196 to rotate in the direction indicated by arrows 193. Lead block 198, being threadably engaged with lead screw 196, thereby moves in a direction indicated by arrows 71. The lead block 198 is attached to the bottom surface of upper plate 40 and therefore imparts movement to the upper plate 40 in the direction of arrows 71. Specification, pages 10-11.

The lift and align table in accordance with the present invention can further include a second slide mechanism 70 to enable alignment in a direction perpendicular to the direction indicated by arrows 71. For example, a second slide mechanism can be mounted on the top surface 42 of the upper plate 40. The second slide mechanism would be installed so that the direction of the movement of the lead block 198 is perpendicular to the direction of arrows 71. Then, another top plate would be installed over the second slide mechanism, as described above, thereby allowing adjustments of the top plate, using the two slide mechanisms, in two directions within the same plane, namely in the direction of arrows 71 and in a direction perpendicular to arrows 71. Specification, page 12 and Figure 11 (as amended by Appellant in a paper filed on January 22, 2004).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Whether claims 1, 8-12, 25, 32 and 33 are properly rejected under 35 U.S.C. § 103 as defining subject matter which would have been unpatentable over Beach, U.S. Patent No. 2,931,519 (hereinafter “Beach”) in view of Bressler et al., U.S. Patent No. 6,136,375 (hereinafter “Bressler”).

B. Whether claims 2-4, 7, 26-28 and 31 are properly rejected under 35 U.S.C. § 103 as defining subject matter which would have been unpatentable over Beach in view of Bressler as applied to claims 1 and 25, and further in view of Mills et al., U.S. Patent No. 4,461,455 (hereinafter “Mills”).

C. Whether claims 13, 17, 19-24 and 34 are properly rejected under 35 U.S.C. § 103 as defining subject matter which would have been unpatentable over Beach in view of Mills, and further in view of Nemoto, U.S. Patent No. 6,271,657 (hereinafter “Nemoto”).

D. Whether claim 18 is properly rejected under 35 U.S.C. § 103 as defining subject matter which would have been unpatentable over Beach, Mills and Nemoto as applied to claim 17, and further in view of Bressler.

E. Whether claims 35, 39-42, 44, 45 and 46 are properly rejected under 35 U.S.C. § 103 as defining subject matter which would have been unpatentable over Beach, in view of Mills and further in view of Nemoto.

F. Whether claim 43 is properly rejected under 35 U.S.C. § 103 as defining subject matter which would have been unpatentable over Beach in view of Mills and Nemoto as applied to claim 41, and further in view of Shiiba et al., U.S. Patent No. 4,643,630 (hereinafter “Shiiba”).

VII. ARGUMENT

A. The subject matter of claims 1, 8-12, 25, 32 and 33 would not have been obvious over Beach in view of Bressler.

Claim 1 recites, inter alia, a “third section disposed over said sliding mechanism and attached to said block.” An embodiment of the sliding mechanism 70 and the movable block 198 are shown, for example, in Figure 7 of the specification. In the disclosed embodiment, the block 198 moves linearly in response to rotation of lead screw 196. Specification, page 11, lines 9-15. The specification discloses that an upper plate 40 which, as best seen in Figure 1, is mounted over the sliding mechanism and is attached to the movable block. Specification, page 11, lines 16-25.

Beach fails to teach or suggest the combination defined in claim 1 which includes this limitation. The Office Action asserts that Beach discloses a sliding mechanism “comprising a block (113) and a lead screw (110),” and that a “third section (13) [is] disposed over said sliding mechanism and attached to said block.” Office Action, page 3.

(Please note that element 113 of Beach is illustrated in Figure 9.) There is no support in Beach for this assertion. In Beach, the “third section (13)” is not “disposed over said sliding mechanism” -- it is the sliding mechanism. Elements 113 and 110 in Beach are part of the assembly 13. See column 7, lines 10-50 and Figure 2. The assembly 13 cannot be the claimed “sliding mechanism” and at the same time a “third section disposed over said sliding mechanism.”

The Office Action does not rely on Bressler to teach the above discussed claim limitation, and, Bressler does not teach or suggest such a limitation. Thus, claim 1 is allowable over Beach in view of Bressler, even if the two references are properly combinable under 35 U.S.C. § 103 (and they are not, as discussed below). For at least this reason, claim 1 is allowable.

In addition, claim 1 recites that the sliding mechanism comprises “slider blocks having slide rails.” An embodiment of this feature of the invention is shown in Figure 7, wherein sliding blocks 190 are shown on rails 182. The Office Action admits that Beach fails to teach or suggest this limitation, and relies on Bressler for this shortcoming.

Bressler relates to a method of applying a printing medium to a printing roll employed in rotogravure printing. Rotogravure printing is a commercial printing process that controls ink thickness and area of coverage. With reference to Figure 1, Bressler discloses a mechanism comprising a platform 22 having guide rails 24. A carriage 32, having supports 30 engaged with the guide rails 24, moves along the platform 22.

According to the Office Action, it would have been obvious “to one of ordinary skill in the art ... to provide the device taught by Beach with the guide rails and blocks taught by Bressler et al. in order to keep the first and second sections in alignment at all times while allowing for linear adjustments as needed.” Office Action, page 3. The proposed combination is a transparent hindsight reconstruction, where the Office Action simply picks and chooses elements from unrelated prior art references to come up with the claimed combination. The only motivation for such a combination is Appellant’s claims.

Beach relates to an aircraft component dolly for moving jet engines. The Beach dolly has a mechanism for precise linear adjustments – adjuster assembly 13. Thus, Beach already has an assembly that performs the function of the mechanism which the Office Action proposes to add. The Beach adjuster assembly 13 includes two carriages 103 that are connected by telescoping tubular rods 106. Carriages 103 are supported by rollers 104 such that the carriages 103 can move linearly along tracks 105. Thus, Beach discloses a self-contained mechanism specifically designed for linear movement of jet engines.

Bressler relates to a device used in the printing industry. The device has a carriage 32 with supports 30 which slide on guide rails 24 of a platform. There exists absolutely no motivation to somehow substitute this printer assembly in place of the aircraft engine adjuster assembly 13 of Beach. Beach has an assembly which is suited for axially moving aircraft engines on a dolly. The Beach assembly has carriages connected by telescoping tubular rods, and is supported by rollers that move linearly in tracks.

The Office Action asserts that “the block and slider mechanism of Bressler is a functional equivalent of the telescopic tubes of Beach.” Office Action, page 9. This is mere guesswork which finds no support in the references. Regardless, the inquiry is not whether mechanisms of two references are “equivalent,” but rather whether or not motivation exists to modify the references as proposed.

The assertion that the self-contained aircraft engine placement sliding assembly of Beach would for some reason be removed and replaced by a slide and guide rails imported from the printing industry is nothing more than guesswork on the part of the Office Action. There exists no motivation for the proposed combination in the references themselves. Beach identifies no problem with its self-contained aircraft engine adjuster assembly 13, and Bressler does not propose that its printing industry slide mechanism could somehow be used for moving aircraft engines. Thus, no motivation exists in the references themselves for such a combination, and no motivation exists based on the nature of the problem to be solved. The references are clearly from non-analogous art.

The Office Action's reliance on the "skill in art" component for the necessary combination is improper in this case. As explicitly provided in MPEP:

A statement that modifications of the prior art to meet the claimed invention would have been "well within the ordinary skill of the art at the time the claimed invention was made" because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

MPEP 2143.01 (emphasis in original). The level of skill in the art component cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308 (Fed. Cir. 1999); MPEP 2143.01. The Office Action has not offered any objective evidence to support its proposed substitution of mechanisms in the references, and, thus, its bare reliance on the "skill in the art" for motivation is improper.

Thus, the proposed combination is not proper under 35 U.S.C. § 103. Claims 8-12 depend from claim 1 and should be allowed for at least the same reasons as claim 1. In addition, claims 8-11 recite other limitations which, in combination with their base claim, are not taught or suggested by the references, taken alone or in combination.

Claim 12 recites "[t]he apparatus according to claim 1 further comprising a second sliding mechanism over said third section capable of motion in a second horizontal direction perpendicular to said first horizontal direction." Claim 12 further recites a "fourth section disposed over said second sliding mechanism capable of motion in said vertical direction, first horizontal direction and second horizontal direction."

To reject claim 12, the Office Action asserts that Beach teaches a "third section (132) ... comprising: a second sliding mechanism (134, 135, 136); [and] a fourth section (140) disposed over said second sliding mechanism." However, with reference to Figure 7 and associated text of Beach, it is clear that the reference does not disclose the arrangement asserted by the Office Action. Even assuming that element 132 is a "third section" and elements 134-136 comprise a "second sliding mechanism," it is evident that the elements

134-136 are not “over” the element 132, as recited in claim 12. Rather, in Beach the elements 134-136 are disposed underneath element 132 for moving element 132.

Beach fails to teach any sliding mechanism between elements 132 and 140, which the Office Action compares to the claimed “third” and “fourth” sections, respectively. Therefore the Office Action’s proposed rejection does not correspond to the limitations of claim 12. This is a separate and distinct reason why claim 12 is allowable.

Claim 25 recites an apparatus having a “mechanism for sliding an object ... wherein said mechanism for sliding comprises a lead screw and a movable block mechanism, and slider blocks having slide rails.” As discussed above with respect to claim 1, Beach and Bressler are not properly combinable and therefore fail to render obvious these limitations. For at least these reasons, claim 25 is allowable. Claims 32 and 33 depend from claim 25 and should be allowable for at least the same reasons.

B. The subject matter of claims 2-4, 7, 26-28 and 31 would not have been obvious over Beach in view of Bressler, and further in view of Mills.

Claims 2 and 26 recite, inter alia, that the “lifting mechanism compris[es] a jacking screw mechanism.” Claims 3 and 27 recite that the “lifting mechanism comprises a gas cylinder assembly.” Claims 4 and 28 recite that the “lifting mechanism comprises a jacking screw mechanism and a gas cylinder assembly.” And, claims 7 and 31 recite a “pressurized gas source for said gas cylinder assemblies.”

Initially, this rejection is traversed because it is based upon the improper rejection of independent claims 1 and 25, as discussed above. Claims 2-4, 7, 26-28 and 31 depend from claims 1 and 25, and incorporate all of the limitations of their base claims. These dependent claims are allowable for at least the same reasons as for allowance of their base claims, and for other reasons.

Further, no motivation exists to combine the teachings of Beach and Bressler (which is already improper, as discussed above) with Mills. The Office Action states that it would not have been obvious to “one of ordinary skill in the art ... to provide the lift assemblies taught by Mills et al. in the device taught by Beach in order to allow the apparatus to align the object being lifted with its intended receiver in a manner that minimizes the chance of damage to the object while it is being mounted.” Office Action, page 5. However, no motivation exists for such a combination.

Mills, like Beach, relates to a lifting and positioning apparatus for aircraft engines. The Mills apparatus has a lower platform 22 and an upper platform 20. The upper and lower platforms are connected to one another by jack assemblies 64, 66, 68 and 70. Col. 5, ll. 25-27. The jack assemblies are actuated to move the lower platform 22 downwardly away from the upper platform 20 so that the Mills apparatus rests on bearings 54 of the lower platform 22. Col. 7, ll. 35-37. The upper platform 20 has air bellows 120, 122, 124 and 126 which move lift beams 130, 136. The lift beams 130, 136 support a load, and the air bellows are used to orient an aircraft engine to its correct orientation. Col. 6, l. 39 to col. 7, l. 44.

Again, the Office Action relies only on “skill in the art” for supplying the required motivation, which is to “minimize[] the chance of damage.” There is simply no support for this assertion because the mechanism of Beach is self sufficient and there is no motivation to modify Beach with the teachings of Mills or vice versa. Beach discloses a hydraulic scissor lift assembly 12 which is described in detail in column 4, line 30 through column 7, line 10. The scissor lift 12 has main rams 77, booster rams 90, a pump 96 with check valves to control hydraulic flow rates, and a safety means for preventing unwanted or accidental movement of the frame. Col. 5, l. 37 through col. 6, l. 69.

The Office Action asserts that “Mills identifies a problem with earlier device, namely that part may be damaged during lifting and alignment with a receiving device.” Office Action, page 10. A closer look at Mills reveals that the problem identified and solved therein bears no connection with Beach (or Bressler, which bears no relation to

lifting and alignment). Mills identifies a problem when lifting and aligning aircraft engines with “chain hoists” (col. 1, l. 49 – col. 2, l. 2) and “fork lifts” (col. 2, ll. 3-37). To the contrary, Beach does not disclose chain hoists or fork lifts, but rather a sophisticated aircraft dolly that has two separate vertical and two separate horizontal moving and adjustment mechanisms.

There are no shortcomings or problems identified in Beach with respect to its lift mechanism, nor did the Office Action point to any knowledge in the art that would suggest any shortcoming in the system of Beach. Thus, there is no motivation or reason to add to Beach’s lift assembly extra “jack screws” or “air bellows” of Mills. Such a “modification” would be unnecessary and redundant in Beach.

The only motivation behind the proposed combination is Appellant’s claims. The Office Action uses the claimed invention as an instruction manual to pick and choose among features in Beach and Mills, and then relies on “skill in the art” for motivation to propose an unnecessary modification. To avoid this very result the Federal Circuit has stated that “[r]arely ... will the skill in the art component operate to supply missing knowledge of the prior art to reach an obviousness judgment.” *Al-Site Corp. v. VSI Int’l Inc.*, 174 F.3d 1308 (Fed. Cir. 1999).

For these reasons, the combination of Mills with Beach and Bressler is improper. This is a separate and distinct reason why claims 2-4, 7, 26-28 and 31 are allowable.

C. The subject matter of claims 13, 17, 19, 20-24 and 34 would not have been obvious over Beach in view of Mills, and further in view of Nemoto.

Claim 13 recites, inter alia, “a lifting mechanism disposed between said base frame and said first section for lifting and lowering said first section in a vertical direction with respect to said base frame, said lifting mechanism comprising a jacking screw mechanism and a gas cylinder assembly, said jacking screw mechanism having a manual drive mechanism.”

The Office Action admits that Beach fails to teach or suggest a “lifting mechanism being a combination of a manual jack screw and a pneumatic lift device.” Office Action, page 5. For this shortcoming, the Office Action relies on Mills, but admits that even Mills “do[es] not teach the jackscrew as being manually actuated.” Office Action, page 6. For this shortcoming, the Office Action relies further on Nemoto.

Initially, Beach and Mills are not properly combinable, as discussed above. And, Nemoto, which relates to a test head positioner for semiconductor testing devices, is wholly unrelated to Beach and Mills, which relate to aircraft component dollies. Again, Nemoto is non-analogous art to Beach and Mills. This proposed combination is another example of the Office Action’s gymnastics of combining different references with nothing but the claimed invention as the road map. With such practice, not a single invention comprising innovative combinations of mechanical components would ever be patentable. The Office Action would simply find any number of references that disclose, separately, the concepts taught by the invention, and proclaim the invention obvious. The law specifically rejects this type of practice.

The Office Action states that it would not have been obvious to “provide the device taught by Beach with the lift assemblies taught by Mills et al. and to operate them manually as taught by Nemoto in order to allow the apparatus to align the object being lifted with its intended receiver in a manner that minimizes the chance of damage to the object while it is being mounted.” Office Action, page 6. However, no motivation exists for such a combination.

There is no suggestion or motivation in the references themselves to make the proposed combination, and the Office Action does not assert that any exists. Rather, the Office Action apparently relies on “knowledge in the art” for supplying the required motivation, which is to “minimize[] the chance of damage.” There is simply no support for this assertion because the mechanism of Beach is self sufficient. Beach discloses a hydraulic scissor lift assembly 12 which is described in detail in column 4, line 30 through column 7, line 10. The scissor lift 12 has main rams 77, booster rams 90, a pump 96 with

check valves to control hydraulic flow rates, and a safety means for preventing unwanted or accidental movement of the frame. Column 5, line 37 through column 6, line 69. There are no shortcomings or problems identified in Beach with respect to its lift mechanism, nor did the Office Action point to any knowledge in the art that would suggest any shortcoming. Thus, there is no motivation or reason to add to Beach's lift assembly extra "jack screws" or "air bellows" of Mills. Such a "modification" would be unnecessary and impractical in Beach.

Further, there is no reason to combine Nemoto's "manually turned crank (31) to cause to cause the device [of Beach and Mills] to lift an object." Office Action, page 6. For example, the jack screws of Mills are "driven ... by a centrally located pneumatic drive motor 80." Col. 5, ll. 47-50. Why would anyone replace such a system in Mills with a "manually turned crank" from Nemoto? There is absolutely no motivation for such a drastic change.

The only motivation behind the proposed combination is Appellant's claims. The Office Action uses the claimed invention as an instruction manual to pick and choose among features in Beach, Mills and Nemoto, and then relies on "skill in the art" for motivation to propose an unnecessary modification. To avoid this very result the Federal Circuit has stated that "[r]arely ... will the skill in the art component operate to supply missing knowledge of the prior art to reach an obviousness judgment." *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308 (Fed. Cir. 1999).

For at least these reasons, claim 13 is allowable over the asserted combinations. Claims 17 and 19-24 depend from claim 13 and should be allowed for at least the same reasons as claim 13.

Claim 24 recites, inter alia, a "third section containing a second sliding mechanism disposed over said second section, said second sliding mechanism being operable to move said third section in a direction different than the direction of the first sliding mechanism, said third section having a surface for supporting said piece of

equipment.” As discussed above with respect to claim 12, Beach fails to teach or suggest these claim limitations, and Mills and/or Nemoto add nothing to remedy the deficiency of Beach with respect to claim 24. This is a separate and distinct reason why claim 24 is allowable.

Independent claim 34 recites a “support frame having ... a lifting and lowering mechanism disposed over said support frame, [the] lifting and lowering mechanism comprising at least four jacking screws ... [and] at least two gas cylinders ..., wherein [the] gas cylinders assist [the] jacking screws in [the] lifting and lowering mechanism.” Claim 34 further recites a “first plate connected to [the] lifting and lowering mechanism such that [the] lifting and lowering mechanism imparts motion to [the] first plate.” Thus, the jacking screws and the gas cylinders impart motion to the first plate.

The cited references fail to teach or suggest these claim limitations. The Office Action relies on Mills for the teaching that a “first lift assembly is a series of jack screws (64) and a second lift assembly is a series of pneumatic lifts (54, 120).” The Office Action then asserts Mills teaches that “the two lift assemblies work in tandem to raise the load to its proper position.” Office Action, pages 5-6, emphasis added.

This is a misrepresentation of Mills. As discussed above, Mills relates to a lifting and positioning apparatus for aircraft engines. The Mills apparatus has a lower platform 22 and an upper platform 20. The upper and lower platforms are connected to one another by jack assemblies 64, 66, 68 and 70. Col. 5, ll. 25-27. The upper platform 20 has air bellows 120, 122, 124 and 126 which are used to correctly orient an aircraft engine. Col. 6, l. 39 to col. 7, l. 44. Mills does not teach or suggest that its jack assemblies and air bellows “work in tandem to raise the load.” To the contrary, the jack assemblies and air bellows perform separate functions, and Mills specifically states that “either the elevator bellows or the screw-jacks may be actuated in unison to raise the engine.” Col. 7, ll. 54-59, emphasis added. That is, either the four jack assemblies are activated in unison to lower Mills’ platform 22 downwardly thereby raising the engine, or the four elevator bellows are activated in unison to raise and perform final orientation of the engine. Thus,

Mills fails to teach or suggest these limitations of claim 34, and claim 34 is allowable for at least this reason.

Further, claim 34 recites a “sliding mechanism ... comprising a block having a transmission system for moving [the] block in a ... horizontal direction ...; [and] a second plate disposed over said sliding mechanism and attached to said block.” Beach fails to teach or suggest a “block having a transmission system for moving [the] block [and] a second plate disposed over said sliding mechanism and attached to said block” as recited in claim 34. This is an additional reason why claim 34 is allowable.

Thus, even assuming for the sake of argument that Mills and Beach can somehow be combined as asserted by the Office Action, the references, either alone or in combination, fail to teach or suggest several elements of claim 34. For at least these reasons, claim 34 should be allowed.

D. The subject matter of claim 18 would not have been obvious over Beach, Mills and Nemoto, and further in view of Bressler.

Claim 18 recites, inter alia, that the “sliding mechanism further comprises slider blocks having slide rails.” Initially, claim 18 depends from claims 13 and 17, which are allowable as discussed above. Bressler adds nothing to Beach, Mills and Nemoto to remedy their deficiencies with respect to claims 13 and 17. Claim 18 contains all of the limitations of claims 13 and 17, and is allowable together with its base and intervening claims.

Moreover, Beach, Mills and Nemoto fail to teach or suggest a “sliding mechanism ... compris[ing] slider blocks having slide rails,” as recited in claim 18. For this shortcoming the Office Action relies on Bressler, and asserts that it would have been obvious to add to the combination, which already contains Beach, Mills and Nemoto, the “guide rails and blocks taught by Bressler et al. in order to keep the first and second

sections in alignment at all times while allowing for linear adjustments as needed.” Office Action, page 7.

Bressler is not properly combinable with Beach as discussed above with respect to claim 1. Beach already has an assembly for linear adjustments which is suited for its application – moving aircraft engines. Beach discloses carriages, connected by telescoping rods, and supported by rollers that move linearly in tracks. There is absolutely no reason to substitute into Beach a sliding assembly from the printing industry as taught by Bressler. The insertion of Bressler into the already improper combination of Beach, Mills and Nemoto is even more far fetched and improper. For this additional reason, claim 18 is allowable.

E. The subject matter of claims 35, 39-42, 44, 45 and 46 would not have been obvious over Beach in view Mills and further in view of Nemoto.

Claim 35 relates to a method of positioning an object. Claim 35, inter alia, recites “operating a lift mechanism to move said support section vertically, wherein operating said lift mechanism comprises manually rotating an input shaft attached to jacking mechanisms and supplying a pressurized gas to gas cylinder assemblies to assist moving said support section.”

The cited references, taken alone or in combination, fail to teach or suggest all of the limitations of claim 35. The Office Action asserts that Mills teaches a “series of jack screws (64) and a second lift assembly, a series of pneumatic lifts (54, 120) ..., wherein the two lift assemblies work in tandem to raise the load.” Office Action, page 8. Mills does not teach using its pneumatic cylinders “to assist” its jacking screws, as recited in claim 35. The jack assemblies and air bellows of Mills perform separate functions, and Mills specifically states that “either the elevator bellows or the screw-jacks may be actuated in unison to raise the engine.” Col. 7, ll. 54-59, emphasis added. Claim 35 is allowable for at least this reason.

Further, the references are not properly combinable. The Office Action admits that Beach fails to teach or suggest a lift mechanism “using pneumatic devices,” and relies on Mills for this shortcoming. The Office Action then admits that Mills does not teach or suggest the “jackscrews as being manually actuated,” and relies on Nemoto for that shortcoming. For the reasons discussed above with respect to claim 13, Beach, Mills and Nemoto are not properly combinable.

This is an additional reason why claim 35 is allowable. Claims 39 and 40 depend from claim 35 and should be allowed together with claim 35.

Claim 41 recites, inter alia, a method comprising “providing a base frame, a top frame, and a middle frame disposed between said base frame and said top frame; [and] providing a lift mechanism, having jacking mechanisms and gas cylinder assemblies, between said base frame and said middle frame.” Beach, Mills and Nemoto, taken alone or in combination, fail to teach or suggest the claimed “lift mechanism ... between said base frame and said middle frame.” Moreover, the references are not properly combinable, as discussed above with respect to claim 13. For at least these reasons, claim 41 is allowable.

Claims 42, 44, 45 and 46 depend from claim 41 and are allowable together with claim 41, and also because the unique combinations recited by these dependent claims are neither taught nor suggested by the cited prior art. Claim 42 recites, inter alia, “operating said lift mechanism comprises manually rotating an input shaft attached to said jacking mechanisms.” The references fail to teach or suggest this limitation, and this is another reason why claim 42 is allowable.

Claim 44 recites that “operating said lift mechanism comprises manually rotating an input shaft attached to said jacking mechanisms and supplying a pressurized gas to said gas cylinder assemblies.” Beach in view of Mills and Nemoto fail to teach or suggest these claims limitations, as discussed above with respect to claim 35, and this is a separate reason why claim 44 is allowable.

F. The subject matter of claim 43 would not have been obvious over Beach in view of Mills and Nemoto as applied to claim 41, and further in view of Shiiba.

Claim 43 recites, inter alia, that “operating said lift mechanism comprises supplying a pressurized gas to said gas cylinder assemblies.” Claim 43 depends from claim 41 and contains every limitation of claim 41. As discussed above, claim 41 is allowable over Beach in view of Mills and Nemoto, and Shiiba adds nothing to Beach, Mills and Nemoto to remedy their deficiencies with respect to claim 41. Claim 43 should be allowed for at least the same reasons as for allowance of its base claim. Moreover, it would not have been obvious to combine the teachings of Shiiba with the already improper combination of Beach, Mills and Nemoto.

Shiiba relates to a heavy object loading jig, and teaches a lifting drive having a cylinder. The Office Action asserts that it would have been obvious “to modify the step of operating the lift mechanism taught by Beach, Mills et al. and Nemoto by providing gas to the actuation system as taught by Shiiba et al. in order to make use of a readily available source of power that requires no special knowledge to tap and use.” Office Action, page 9. This assertion is not an explanation of motivation to combine, but rather a conclusion that two systems can be combined simply because they exist. There is absolutely no motivation for the proposed combination, and the Office Action, as evidenced by the bare assertion above, failed to provide any. This is an additional reason why claim 43 is allowable.

VIII. CONCLUSION

For the reasons given above it is respectfully submitted that the final rejections of the pending claims are improper. Accordingly, Appellants requests reversal of all rejections by this honorable Board.

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Respectfully submitted,

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APPENDIX A

Claims Involved in the Appeal of Application Serial No. 09/893,619

1. (Previously Presented) An apparatus for positioning an object comprising:

a first section having a lifting mechanism capable of movement in a vertical direction;

a second section disposed over said lifting mechanism capable of moving corresponding to said lifting mechanism, said second section having a first sliding mechanism capable of movement in a first horizontal direction, said first sliding mechanism comprising a block and a lead screw for moving said block, and further comprising slider blocks having slide rails; and

a third section disposed over said sliding mechanism and attached to said block and in contact with said slider blocks, capable of moving in response to movement of said sliding mechanism and said lifting mechanism, said third section having a surface for supporting an object.

2. (Original) The apparatus according to claim 1 wherein said lifting mechanism comprises a jacking screw mechanism.

3. (Original) The apparatus according to claim 1 wherein said lifting mechanism comprises a gas cylinder assembly.

4. (Original) The apparatus according to claim 1 wherein said lifting mechanism comprises a jacking screw mechanism and a gas cylinder assembly.

5. (Cancelled)

6. (Cancelled)

7. (Original) The apparatus according to claim 3 further comprising a pressurized gas source for said gas cylinder assemblies.

8. (Original) The apparatus according to claim 1 wherein said lifting mechanism comprises hydraulic cylinder assemblies.

9. (Original) The apparatus according to claim 8 further comprising a pressurized hydraulic fluid source for said hydraulic cylinder assemblies.

10. (Original) The apparatus according to claim 1 wherein said first section comprises wheels for moving said apparatus in a second horizontal direction perpendicular to said first horizontal direction.

11. (Previously Presented) The apparatus according to claim 10 wherein said first section further comprises a clearance between said first section and an underlying surface whereby said apparatus can clear obstacles when moving in said second horizontal direction.

12. (Original) The apparatus according to claim 1 further comprising a second sliding mechanism over said third section capable of motion in a second horizontal direction perpendicular to said first horizontal direction, and a fourth section disposed over said second sliding mechanism capable of motion in said vertical direction, first horizontal direction and second horizontal direction.

13. (Previously Presented) An adjustable support for positioning a piece of equipment comprising:

a base frame, a first section, and a second section;

a lifting mechanism disposed between said base frame and said first section for lifting and lowering said first section in a vertical direction with respect to said base frame, said lifting mechanism comprising a jacking screw mechanism and a gas cylinder assembly, said jacking screw mechanism having a manual drive mechanism; and

a first sliding mechanism disposed between said first section and said second section for sliding said second section with respect to said first section, said sliding occurring in a direction perpendicular to said vertical direction, said second section having a surface to support a piece of equipment.

14. – 16. (Cancelled)

17. (Original) The support according to claim 13 wherein said sliding mechanism comprises a lead screw and block mechanism.

18. (Original) The support according to claim 17 wherein said sliding mechanism further comprises slider blocks having slide rails.

19. (Previously Presented) The support according to claim 13 further comprising a pressurized gas source for said gas cylinder assemblies.

20. (Original) The support according to claim 13 wherein said lifting mechanism comprises hydraulic cylinder assemblies.

21. (Original) The support according to claim 20 further comprising a pressurized hydraulic fluid source for said hydraulic cylinder assemblies.

22. (Original) The support according to claim 13 wherein said base frame further comprises wheels for translating said support along an underlying surface.

23. (Original) The apparatus according to claim 22 wherein said base frame further comprises a clearance between said base frame and said underlying surface such that said apparatus can bypass obstructions when translating along said underlying surface.

24. (Original) The support according to claim 13 further comprising a third section containing a second sliding mechanism disposed over said second section, said second sliding mechanism being operable to move said third section in a direction different than the direction of the first sliding mechanism, said third section having a surface for supporting said piece of equipment.

25. (Previously Presented) An apparatus for supporting an object, said apparatus having a mechanism for lifting and lowering the object in a vertical direction and a separate mechanism for sliding an object in a first horizontal direction, said apparatus having wheels for rolling along a surface in a second horizontal direction orthogonal to said first horizontal direction;

wherein said mechanism for sliding comprises a lead screw and a movable block mechanism, and slider blocks having slide rails.

26. (Original) The apparatus according to claim 25 wherein said lifting mechanism comprises a jacking screw mechanism.

27. (Original) The apparatus according to claim 25 wherein said lifting mechanism comprises a gas cylinder assembly.

28. (Original) The apparatus according to claim 25 wherein said lifting mechanism comprises a jacking screw mechanism and a gas cylinder assembly.

29. (Cancelled)

30. (Cancelled)

31. (Original) The apparatus according to claim 27 further comprising a pressurized gas source for said gas cylinder assemblies.

32. (Original) The apparatus according to claim 25 wherein said lifting mechanism comprises hydraulic cylinder assemblies.

33. (Original) The apparatus according to claim 32 further comprising a pressurized hydraulic fluid source for said hydraulic cylinder assemblies.

34. (Previously Presented) An apparatus for positioning an object comprising:

a support frame having wheels for rolling said apparatus in a first horizontal direction;

a lifting and lowering mechanism disposed over said support frame, said lifting and lowering mechanism comprising at least four jacking screws having a manual transmission system for operation of said jacking screws, said lifting and lowering mechanism further comprising at least two gas cylinders having a pressurized gas source for operating said gas cylinders, wherein said gas cylinders assist said jacking screws in said lifting and lowering mechanism;

a first plate connected to said lifting and lowering mechanism such that said lifting and lowering mechanism imparts motion to said first plate;

a sliding mechanism disposed over said first plate, said sliding mechanism comprising a block having a transmission system for moving said block in a second horizontal direction perpendicular to said first horizontal direction;

a second plate disposed over said sliding mechanism and attached to said block such that said sliding mechanism, said lifting and lowering

mechanism, and the rolling of said wheels impart motion to said second plate, said second plate having a surface for supporting an object.

35. (Previously Presented) A method for positioning an object comprising:

providing a table having a support section adapted to move vertically and horizontally;

placing an object on said support section;

moving said table toward a desired destination for said object;

operating a lift mechanism to move said support section vertically, wherein operating said lift mechanism comprises manually rotating an input shaft attached to jacking mechanisms and supplying a pressurized gas to gas cylinder assemblies to assist moving said support section;

operating a slide mechanism to move said support section horizontally;

said object being positioned in a desired location by said moving and operating actions.

36. – 38. (Cancelled)

39. (Original) The method according to claim 35 wherein operating said slide mechanism comprises manually rotating a shaft attached to a lead screw.

40. (Original) The method according to claim 35 wherein moving said table comprises rolling said table utilizing wheels.

41. (Previously Presented) A method for transferring an object comprising:

providing a base frame, a top frame, and a middle frame disposed between said base frame and said top frame;

providing a lift mechanism, having jacking mechanisms and gas cylinder assemblies, between said base frame and said middle frame;

providing a slide mechanism between said middle frame and said top frame;

placing said object on said top frame; and

operating said lift mechanism and said slide mechanism to deliver said object to a desired position.

42. (Previously Presented) The method according to claim 41 wherein operating said lift mechanism comprises manually rotating an input shaft attached to said jacking mechanisms.

43. (Previously Presented) The method according to claim 41 wherein operating said lift mechanism comprises supplying a pressurized gas to said gas cylinder assemblies.

44. (Previously Presented) The method according to claim 41 wherein operating said lift mechanism comprises manually rotating an input shaft attached to said jacking mechanisms and supplying a pressurized gas to said gas cylinder assemblies.

45. (Original) The method according to claim 41 wherein operating said slide mechanism comprises manually rotating a shaft attached to a lead screw.

46. (Original) The method according to claim 41 further comprising rolling said base frame utilizing wheels.